Developing a Consistent Grading Scale Across a Doctor of Pharmacy Program

Cameron C. Lindsey, PharmD, BC-ADM, CDE, BCACP and Brandon Reynolds, PharmD Candidate
Department of Pharmacy Practice & Administration

Background

Student pharmacists around the country strive to achieve a high level of coursework performance during pharmacy school to strengthen their job prospects or increase their chance of attaining a competitive pharmacy residency or fellowship after graduation.[1] As a result of the competitive nature of these post-graduation goals, students may volunteer, obtain leadership positions, work as pharmacy interns while in school, and attempt to earn high marks on their pharmacy school transcripts.[2] In some schools, however, the grading scales utilized to assess student performance may vary from class to class.[1] This can result in confusion and frustration for the student and those that are viewing the transcripts for post-graduate placement. Possible justifications for the use of multiple scales include a better way to differentiate students that would have otherwise received the same grade and enticing students to work harder by setting grading scales higher.[3]

The University of Missouri-Kansas City School of Pharmacy (UMKC SOP) is a public, Midwest pharmacy school with two distance campuses. UMKC SOP enrolls a maximum of 95 students at the Kansas City campus and 30 students at each distance location. UMKC SOP is one such example of a school with classes that do not share consistent grading scales. There was no policy at the University-level at the time of the review requiring a specified grading scheme for all academic units. In the health sciences schools at UMKC, the Schools of Nursing and Health Studies and Medicine utilize a plus/minus (7-point) scale whereas the School of Dentistry applies the whole-letter (10-point) scale.

Objectives

1. Define the different grading scales currently in use at the school.
2. Evaluate the impact on student grade point averages (GPA) that a change to a consistent grading scale would impart.

Methods

Each UMKC SOP syllabus for required, didactic courses for the 2017 calendar year was retrieved and analyzed. Grading scales were defined using the figure below. Each class that did not fit this criteria was considered to have a nontraditional scale created by the course coordinator.

GPA Percentage	Assigned Letter Grade	GPA Points
Whole-letter grading scale		
90-100	A	4.0
80-89.5	B	3.0
70-79.5	C	2.0
<70	F	0
Plus/Minus grading scale		
93-100	A	4.0
90-92.5	A-	3.7
87-89.5	B+	3.3
83-86.5	B	3.0
80-82.5	B-	2.7
77-79.5	C+	2.3
73-76.5	C	2.0
70-72.5	C-	1.7
<70	F	0

Results

Table 1. Frequency of Various Grading Scales Utilized

Grading Scales	Number of Classes
10 point scale (A, B, C)	10
7 point scale (A, A-, B+, B, B-, C+, C, C-)	10
Plus-only scale (A, B+, B, C+, C)	8
Nontraditional scale	7

Table 2. Description of the Seven Nontraditional Grading Scales

Nontraditional Grading Scale Class	"A" Grade Range (%)	"B" Grade Range (%)	"C" Grade Range (%)	Failing Grade Range (%)
Biochemistry	88-100	76-87.9	64-75.9	<64
Medicinal Chemistry I	90-100	80-89.9	67-79.9	<67
Pharmacotherapy I	A: 93-100, A-: 90-92.5	B+: 87-89, B: 80-86	C+: 77-79, C: 75-76	<75
Pharmacotherapy I applied skills lab	A: 93-100, A-: 90-92.5	B+: 87-89, B: 80-86	C+: 77-79, C: 75-76	<75
Pharmacotherapy II	90-100	B+: 87-89.9, B: 80-86.9	75-79.9	<75
Pharmacotherapy III	90-100	B+: 87-89.9, B: 80-86.9	75-79.9	<75
Pharmaceutics I	A: 94-100, A-: 90-93	B+: 87-89, B: 84-86, B-: 80-83	C+: 77-79, C: 74-76, C-: 70-73	<70

Table 3. Comparison of the 10-point, 7-point, and Current SOP Grading Scales on Selected GPA
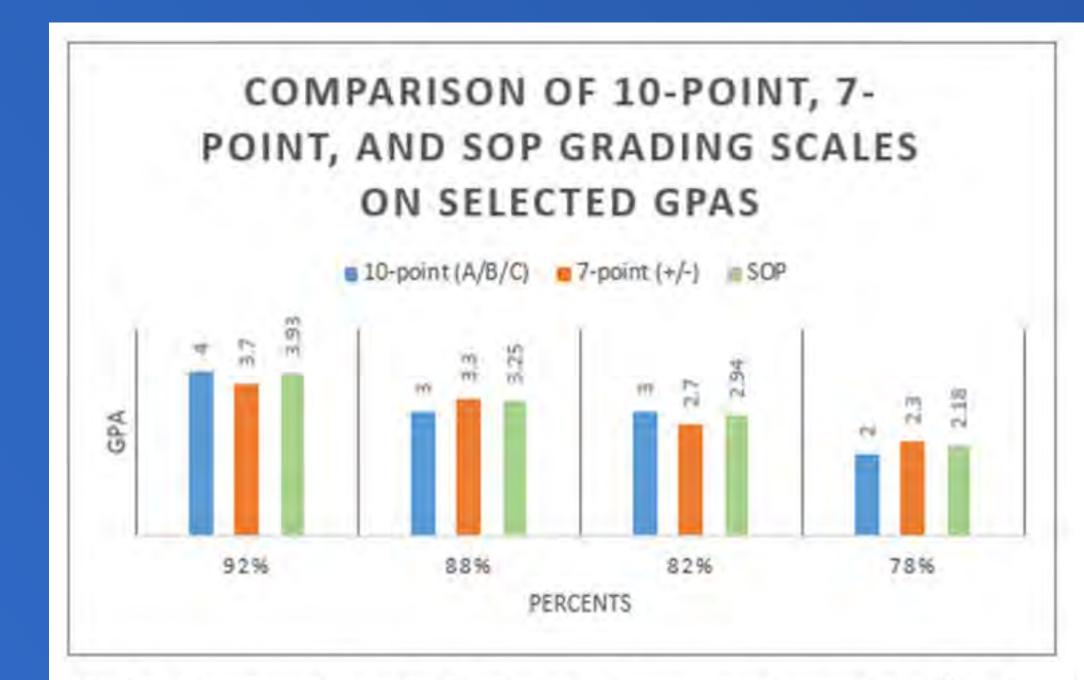

Table 4: Comparison of 10-point, 7-point, and SOP grading scales on selected GPAs. Required didactic coursework with numerical grade scales were utilized to compute the GPA for simulated students with an average of 92%, 88%, 82%, and 78% using the current grade scales in SOP course syllabi. Elective courses or pass/fail courses were not included in this analysis. A total of 90 credit hours are accrued using this methodology.

Results

- Grading scales across the UMKC SOP curriculum varied from standard 10- and 7-point scales, to all plus scales, and nontraditional scales for 35 courses (Tables 1 and 2).
- Inconsistencies among the failing grade course cutoffs were identified (Table 2).
- The current GPA system favors students who earn low A's and B's compared to a 7-point scale but results in slightly lower GPA when compared to the 10-point scale (Table 3).
- Students who earned high Bs or high Cs would receive slightly higher GPAs if the school converted to a 7-point scale; but these same GPAs would be lower if converted to a 10-point scale (Table 3).

Implications

The results of one study indicated that there were no differences in mean course GPA when comparing +/- to whole-letter grading scales.[1] Students indicated that their level of effort when studying for final exams was greater with a 7-point scale.[1] Grade inflation has also been voiced as an issue with the whole-letter scales and the 7-point scale may be a solution to this as it allows for increased differentiation among top performing students.[3,4] The difference in GPA when changing from a 10-point to a 7-point scale in undergraduate coursework resulted in 2.201 GPA units to 2.205 units, respectively.[5]

Based on the available literature, changing to a 7-point grading scale would decrease grade inflation[1,3,4], increase student differentiation[1,3,4], increase final exam studying[1], and would not change overall mean student GPA.[1] When grading scales are adjusted in such a way, this may serve to reduce confusion and allow for postgraduate programs and potential employers to better realize student performance.[2]

Prior to the UMKC SOP Assessment Committee's proposed policy to convert to a 7-point scale and a consistent 70% cutoff for passing across all graded coursework, the University released a policy that all coursework would be expected to be on the 7-point scale by Fall 2018.

References

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